d. Amendments to Claims

1. (Original) An apparatus, comprising:

a first partial polarization splitter to transmit light of one polarization to first and second optical outputs and to transmit light of an orthogonal polarization to substantially only the second optical output;

a second partial polarization splitter to transmit light of one polarization to third and fourth optical outputs and to transmit light of an orthogonal polarization component to substantially only the fourth optical output, the second partial polarization splitter having an optical input located to receive light from the second optical output; and

an ordinary polarization splitter to transmit light of one polarization to a fifth optical output and to transmit light of an orthogonal polarization to a sixth optical output, the ordinary polarization splitter having an optical input located to receive light from the fourth optical output.

2. (Original) The apparatus of claim 1, wherein the first and second partial polarization splitters separate orthogonal polarizations of light along different directions.

3. (Original) The apparatus of claim 2, further comprising a quarter wave plate located between the fourth optical output and the optical input of the ordinary polarization splitter.

4. (Original) The apparatus of claim 3, wherein the ordinary polarization splitter and second partial polarization splitter separate orthogonal polarizations of light along different directions.

5. (Original) The apparatus of claim 2, further comprising:

a first light intensity detector configured to measure light intensities from the first optical output;

a second light intensity detector configured to measure light intensities from the third optical output; and

a third light intensity detector configured to measure light intensities from the fifth optical output.

6. (Original) The apparatus of claim 5, further comprising:

a fourth light intensity detector configured to measure light intensities from the sixth optical output.

7. (Original) The apparatus of claim 1,

wherein in response to receiving input light at the first partial polarization splitter, the first splitter transmits to the first optical output light having an intensity proportional to an intensity of a projection of the input light onto a first vector, the second partial polarization splitter transmits to the third optical output light whose intensity is substantially proportional to an intensity of a projection of the input light onto a second vector, and the ordinary splitter transmits to the fifth optical output light whose intensity is substantially proportional to an intensity of a projection of the input light onto a third vector; the first, second, and third vectors being basis vectors of a tetrahedral basis set.

8. (Currently amended) The apparatus of claim 1, wherein one of said partial polarization splitters is configured to send one of ½ ± 5% and 2/3 ± 5% of an intensity of one ~~of~~ linear polarization component of light by the one of said partial polarization splitters to one output port thereof, the one linear polarization component being orthogonal to the polarization component sent to only one of the outputs of the one of said partial polarization splitters.

9. (Currently amended) The apparatus of claim 2, wherein either said partial polarization splitters have relatively rotated ~~substantially non-parallel~~ optical axes or said apparatus includes a polarization rotator ~~is~~ located along an optical path connecting said partial polarization splitters.

10. (Withdrawn) An apparatus, comprising:

a polarization splitter to separate light into a first polarization component and a second orthogonal polarization component;

a first optical interferometer coupled to receive light of the first and second polarization components from the splitter at separate optical inputs and configured to interfere part of the light of the first polarization component with part of the light of the second polarization component; and

a second optical interferometer coupled to receive light of the first and second polarization components from the splitter at separate optical inputs and configured to interfere a portion of the light of the first polarization component with a portion of the light of the second polarization component; and

wherein the second optical interferometer is configured to produce a different relative phase between interfering light of the two polarization components than the first optical interferometer.

11. (Withdrawn) The apparatus of claim 10, wherein the second interferometer is configured to interfere the portions of the light of the two polarization components with a relative phase shift whose magnitude is 120 degrees ± 10 degrees up to an integer multiple of 360 degrees.

12. (Withdrawn) The apparatus of claim 10, wherein the first interferometer is configured to interfere the parts of the light of the two polarization components with a relative phase shift whose magnitude is less than about 10 degrees up to an integer multiple of 360 degrees.

13. (Withdrawn) The apparatus of claim 11, wherein the interferometers are configured to rotate polarizations of part of the light received from the splitter to produce optical interference between the light of the first and second polarization components.

14. (Withdrawn) The apparatus of claim 13, wherein the first interferometer is configured to interfere the parts of the light of the two polarization components with a

relative phase shift whose magnitude is less than about 10 degrees up to an integer multiple of 360 degrees.

15. (Withdrawn) The apparatus of claim 11, further comprising:

a first light intensity detector located to measure a light intensity of one of the first polarization component and the second polarization component;

a second light intensity detector located to measure an intensity of light interfered in the first interferometer; and

a third light intensity detector located to measure an intensity of light interfered in the second interferometer.

16. (Withdrawn) The apparatus of claim 15, further comprising:

a fourth light intensity detector located to measure another intensity of light interfered in the second interferometer, the third and fourth detectors being configured to measure intensities of light associated with projections on independent basis vectors of a tetrahedral basis set.